

What is claimed is:

1. A battery packaging laminate sheet comprising:

a metallic layer; and

a thermally welding resin layer laminated on the metallic layer and having a portion to be thermally welded, the portion to be thermally welded having a partial area with which a tab of a battery using a battery packaging laminate sheet is thermally welded, and the partial area having a thickness larger than a thickness of a remaining area of the portion to be thermally welded.

2. The battery packaging laminate sheet according to claim 1, wherein the thickness of the partial area, with which the tab is thermally welded, of the thermally welding resin layer is determined to be larger than the thickness of the remaining area of the portion, to be thermally welded, of the thermally welding resin layer by a value equal to or greater than one half of the thickness of the tab.

3. A battery element internally sealed in a laminate sheet provided with a thermally welding resin layer and a metallic layer laminated thereon, comprising:

an electric power generating element; and

a tab formed with a thermally welding resin layer which is thermally welded with a thermally welding resin layer of a laminate sheet and connected to the electric power generating element.

4. The battery element according to claim 3, wherein a thickness of the thermally welding resin layer is determined to be a value equal to or greater than one half of the thickness of the tab.

5. A laminate battery comprising:

a tab;

an electric power generating element connected to the tab; and

a laminate sheet allowing the electric power generating element to be accommodated and having:

a metallic layer; and

a thermally welding resin layer laminated on the metallic layer,

wherein the tab and the thermally welding resin layer are welded by permitting a thermally welding area, which is formed in at least one of the thermally welding resin layer and the tab, and the other of the

thermally welding resin layer and the tab to be welded to one another.

6. The laminate battery according to claim 5, wherein the thermally welding area is composed of thermally welding resin and integrally formed with the thermally welding resin layer such that the thermally welding area corresponds to a partial area, to which the tab is thermally welded, of a portion to be thermally welded, of the thermally welding resin layer.

7. The laminate battery according to claim 6, wherein a thickness of the thermally welding area of the thermally welding resin layer is determined to be larger than a thickness of a remaining area of the portion to be thermally welded by a value equal to or greater than one half of the thickness of the tab.

8. The laminate battery according to claim 7, wherein a thickness of the thermally welding area of the thermally welding resin layer is determined to be larger than the thickness of the remaining area of the portion to be thermally welded within a range equal to or less than the thickness of the tab.

9. The laminate battery according to claim 5, wherein the thermally welding area is composed of thermally welding resin and integrally formed with the tab.

10. The laminate battery according to claim 9, wherein a thickness of the thermally welding area is determined to be equal to or larger than one half of the thickness of the tab.

11. The laminate battery according to claim 10, wherein the thickness of the thermally welding area is determined to be equal to or less than the thickness of the tab.

12. The laminate battery according to claim 5, wherein the tab includes a negative electrode tab composed of nickel and a positive electrode tab composed of aluminum and wherein, suppose that x represents a cross sectional area of the negative electrode tab and y represents a cross sectional area of the positive electrode tab, x and y satisfy the following formula:

$$1 < \frac{x}{y} \leq 2.6$$

13. The laminate battery according to claim 5, wherein the laminate

battery is installed on a vehicle as a battery module.

14. A method of manufacturing a laminate battery, comprising:

preparing a tab and an electric power generating element connected to the tab;

5 preparing a laminate sheet having a metallic layer and a thermally welding resin layer laminated on the metallic layer; and

welding the tab and the thermally welding resin layer, such that a thermally welding area formed in at least one of the thermally welding layer and the tab is welded to the other of the thermally welding layer and the tab, while permitting the electric power generating element to be
10 accommodated in the laminate sheet.